

120	QC5- Inspect part completeness to step on W/O	0.00
120		
QC	Memo	0.00
Quality Control		

Work Order ID 154254

Wednesday, December 07, 2016 10:19:30 A

154254

Page 2

Item ID: D3391-011

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Fwd Tube Assembly

Start Date: 12/13/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 12/22/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	HAAS CNC VERTICAL MACHINING #1	0.00							
130									
HAAS 1	Memo	0.20							
HAAS CNC vertical machine #1	1-Machine as per Folio FA590 Rev. <u>AA</u> & Dwg D3391 Rev. <u>3</u> Identify as D3391-1								
	2-Deburr								
140	QC2- Inspect parts off machine FAI/FAIB	0.00							
140									
QC	Memo	0.00							
Quality Control									
150	CONVENTIONAL MILLING MACHINE	0.00							
150									
Mill Conv	Memo	0.08							
Conventional Milling Machine	1-Drill .1875" at end of tube as per Dwg D3391								

DAS
32
9-89

16-12-21

Work Order ID 154254

Wednesday, December 07, 2016 10:19:30 A

154254

Page 4

Item ID: D3391-011

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Fwd Tube Assembly

Start Date: 12/13/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 12/22/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

180

0.00

180

Skidtubes

0.11

Memo

1- Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step (Do not open tow cap holes to finish size)

2- Drill and float bag holes as per Dwg D3391 using DT8798 (DRILL ALL HOLES)

3-Open tow cap holes to .208" as per Dwg D3391

4-Open Tow Ring hole to .640" as per Dwg D3391

5- open float bag holes 0.328" and counter sink as per dwg D3391

6-Deburr and scribe batch # inside aft end

7- transfer drill D3391-011 with D3391-013

NO WEARPLATE HOLES ARE TRANSFER DRILLED

MID TUBE BATCH #

154253

0.00

QC5- Inspect part completeness to step on W/O

0.00

Memo

190

190

QC

Quality Control

17-1-3
17-01-04

Work Order ID 154254***154254***

Page 6

Wednesday, December 07, 2016 10:19:30 A

Item ID: D3391-011

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Fwd Tube Assembly

Start Date: 12/13/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 12/22/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230	QC5- Inspect part completeness to step on W/O	0.00							
230									
QC	Memo	0.00							
Quality Control									
235	Pressure Wash per QSI005 4.3	0.00							
235									
HandFinish	Memo	0.05							
Hand Finishing	AND REALODINE AS PER PAR09-043								
240		0.00							
240									
SprayPaint	Memo	0.00							
Spray Painting	PRIME AS PER DWG AND QSI005 4.2.1.3.3 PRIMER BATCH: <u>135929</u> PAINT AS PER DWG AND QSI005 4.2.2.4 PAINT: <u>136205</u>								

Work Order ID 154254***154254***

Page 7

Wednesday, December 07, 2016 10:19:30 A

Item ID: D3391-011

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Fwd Tube Assembly

Start Date: 12/13/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 12/22/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

250 QC14- Inspect Spray Paint

0.00

250

QC

Memo

0.00

Quality Control

1x d 17/01/09

DAS
15
9-89

255

0.00

255

Skidtubes

Skidtubes

Memo

0.08

Skidtubes

**** install D3591-1 spacer as per DSI9364 and wearplate as per DWG ****

1x d 17/01/09

257

QC5- Inspect part completeness to step on W/O

0.00

257

QC

Memo

0.00

Quality Control

1x d 17/01/09

DAS
38
9-89

JAN 10 2017

Work Order ID 154254***154254***

Page 8

Wednesday, December 07, 2016 10:19:30 A

Item ID: D3391-011

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Fwd Tube Assembly

Start Date: 12/13/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 12/22/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

260

Identify as per dwg & Stock Location: w/b

0.00

260

Packaging

Memo

0.00

0412-742-011 / B154251v1φ17/01/09

Packaging

280

QC21- Final Inspection - Work Order Release

0.00

280

QC

Memo

0.02

DAS
21
9-89

JAN 12 2017

Quality Control



JAN 10 2017

Picklist Print

Wednesday, December 07, 2016 10:19:38 AM

Page 1

Work Order ID: 154254

154254

Parent Item: D3391-011

D3391-011

Parent Item Name: Fwd Tube Assembly

Start Date: 12/13/2016

Required Date: 12/22/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP A05.09.13New issue KJ/JLM
 IPP B06.02.09Dwg rev.D EC
 IPP C 07.03.13 revF dwg ec
 IPP D 07.11.01 ecn1053P EC
 IPP Rev:E ECN 1056 07-11-12 DD verified by:EC
 IPP Rev:F 08-09-08 new process (ecn 08-510) DD verified by:EC
 IPP Rev:G 08-09-10 revH as per dwg DD verified by:EC IPP Rev:H
 10.04.07 add part in bom DD verified by:JLM IPP Rev:I 11.11.14 AS
 PER REV.I DD verified by:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6013-047 *D6013-047* Skidtube Material		Manufactured	No			100	Each	84.0000	1	1			
									**			16-12-12	
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					LG003			84					
					86064			84					
D3401-041 *D3401-041* Tow Cap Assembly		Manufactured	No			255	Each	7.0000	1	1			
									**			17/01/09	
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					FP001			7					
					138950			3					
					142465			2					
					147909			2					
D4095-051 *D4095-051* Wearpad Fwd		Manufactured	No			255	Each	10.0000	1	1			
									**			17/01/09	
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					FP001			10					
					149296			10					

Picklist Print

Page 2

Wednesday, December 07, 2016 10:19:38 AM

Work Order ID: 154254

154254

Parent Item: D3391-011

D3391-011

Parent Item Name: Fwd Tube Assembly

Start Date: 12/13/2016

Required Date: 12/22/2016

Start Qty: 1.00

Required Qty: 1.00

D3670-4-200

Manufactured No

220

Each

70.0000

D3670-4-200

Bushing

**

9 9
17-1-5

Location

Loc Qty

Loc Code

FG

10

87709

10

LG001

60

138819

3

150477

57

9

D3672-1

Manufactured No

255

Each

948.0000

D3672-1

Washer, Phenolic

**

4 4
all 12/10/16

Location

Loc Qty

Loc Code

FG

10

85222

10

FP001

780

112218

4

134785

276

150074

500

ST049

158

147077

158

XL

Picklist Print

Page 3

Wednesday, December 07, 2016 10:19:38 AM

Work Order ID: 154254

154254

Parent Item: D3391-011

D3391-011

Parent Item Name: Fwd Tube Assembly

Start Date: 12/13/2016

Required Date: 12/22/2016

Start Qty: 1.00

Required Qty: 1.00

AN3C4A

Purchased

No

255

Each

1,932.000

10

10

AN3C4A

Bolt

del 17/10/109

Location

Loc Qty

Loc Code

FG	20
122814	20
FP001	706
M133440	7
M134396	41
M134509	6
M134606	29
M134676	44
M134762	106
M134861	13
M135058	123
M135127	22
M135297	52
M135442	2
M135774	53
M135864	64
M135948	144
OVER002	1000
<u>M136295</u>	1000
ST350	206
M135704	206

x10

Picklist Print

Page 4

Wednesday, December 07, 2016 10:19:38 AM

Work Order ID: 154254

154254

Parent Item: D3391-011

D3391-011

Parent Item Name: Fwd Tube Assembly

Start Date: 12/13/2016

Required Date: 12/22/2016

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0332R

Purchased

No

255

Each

5,036.000

10

10

NAS1149C0332R

ell 12/01/09

WASHER

Location

Loc Qty

Loc Code

FP001

668

m135672

33

m135948

14

m136199

621

GA

74

m133284

74

ST260a

3500

m135466

1000

m136042

500

m136301

2000

x10

ST266

794

m135408

94

m135766

500

m135908

200

AEIS-1032-225

AEIS8-1032-225

Purchased

No

255

Each

0.0000

10

10

AFI S-1032-225

Insert

Y AHS4-1032-225/M135998

(x10)

ell 12/01/09

DQA: _____ Date: _____

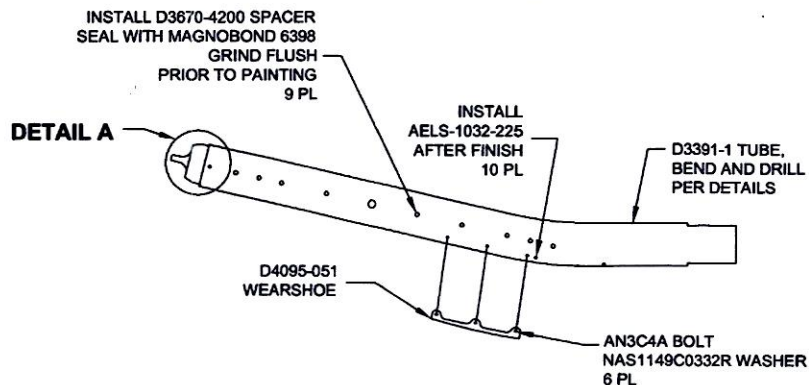


WORK ORDER NON-CONFORMANCE / UPDATE

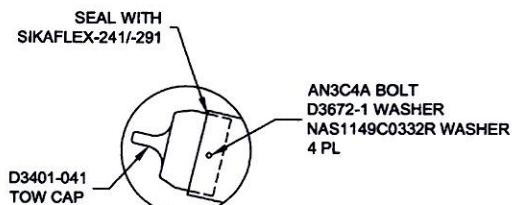
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Description Work Order Deviation				Disposition																																																													
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																



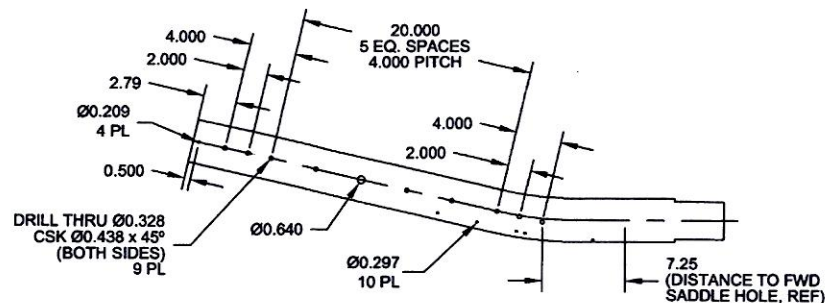
D3391-011 FWD TUBE ASSEMBLY
ASSEMBLY DETAIL



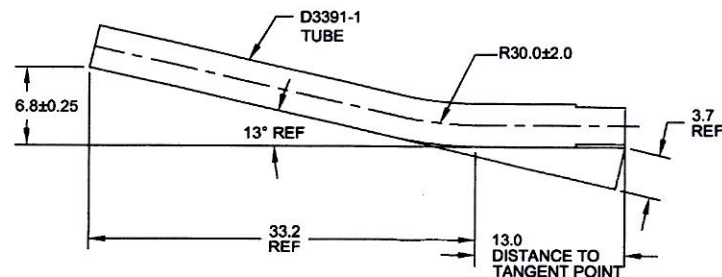
DETAIL A
SCALE 2X

D3391-011 FWD TUBE ASSEMBLY PARTS LIST

QTY -011	PART NUMBER	DESCRIPTION
X	D3391-011	FWD TUBE ASSEMBLY
1	D3391-1	TUBE
1	D3401-041	TOW CAP
9	D3670-4200	SPACER
4	D3672-1	WASHER
1	D4095-051	WEARSHOE
10	AELS-1032-225	INSERT
10	AN3C4A	BOLT
10	NAS1149C0332R	WASHER



D3391-011 DRILLING DETAIL



D3391-011 BENDING DETAIL
(MAKE FROM D3391-1)

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 154254

RELEASED
2016-04-28

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	ML	EUGENE, OR	
CHECKED	CP	DRAWING NO.	REV. J
MFG. APPR.	By	D3391	SHEET 3 OF 11
APPROVED	By	TITLE	SCALE
DE APPR.	By	412 FLOAT SKIDTUBE	NTS
DATE	16.01.14	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

DQA: _____ Date: _____

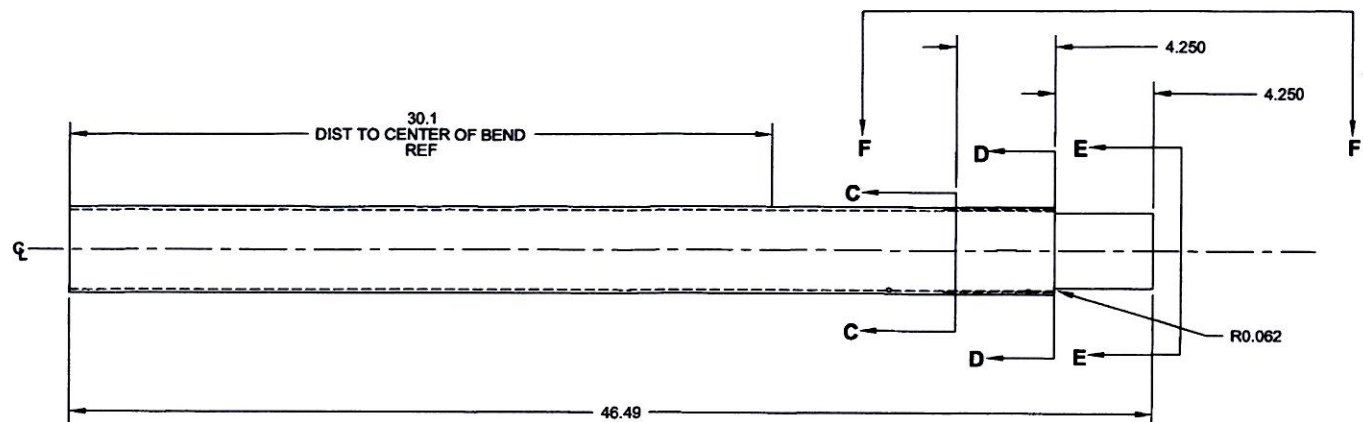


WORK ORDER NON-CONFORMANCE / UPDATE

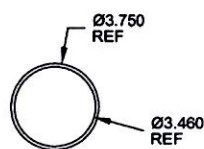
QA Closed: _____ Date: _____

Work Order update only ☐

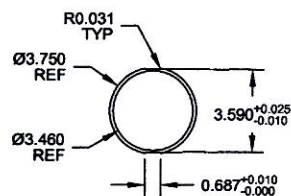
Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____							
Misidentified ☐	☐ Past Due								



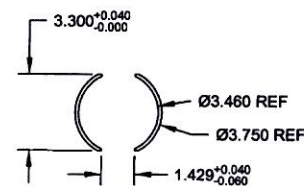
D3391-1 TUBE
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



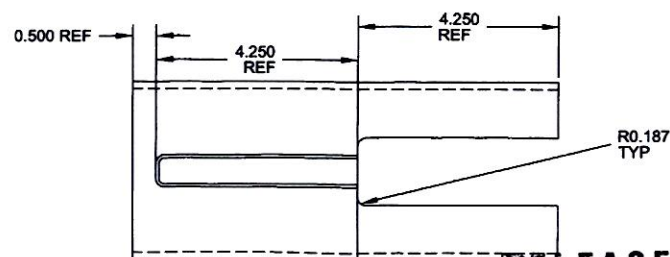
SECTION C-C



SECTION D-D



SECTION E-E



VIEW F-F
SCALE 2X

RELEASED
2016-04-28

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	ML	EUGENE, OR	
CHECKED	CP	DRAWING NO.	REV. J
MFG. APPR.	22	D3391	SHEET 5 OF 11
APPROVED	22	TITLE	SCALE
DE APPR.	22	412 FLOAT SKIDTUBE	NTS
DATE	16.01.14	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :			MRB (QS1042) Approval
Description Work Order Deviation		Disposition			Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : ☐			